

## DESCRIPTION OF THE PREFERRED EMBODIMENT

The system of this invention can be described by the following second equation, with respect to seek time at full stroke:

The 1 ms to 5 ms it takes for the concurrent-full stroke access to a set of uninterrupted data tracks and sectors on two quadrants of disk area = (in every  $\frac{1}{4}\pi$  radians per one revolution of disk) X 2 (on two quadrants) X 4 (by two pairs) X 2 (on both sides of the number of units of platters.) (2)

With reference to figure 1, the prior art has a rotating disk 10 and carriage arm 10c, where the transducer head 10b moves along a path 10a. At that instant the transducer head 10b can only access tracks that are on quarter 10d. Tracks on quadrant areas 10c, 10f and 10g are not accessible by the straight-arm actuator 10c at that instant in time. For example for any track on quarter area 10g to be accessible by transducer head 10b, the disk 10 must make many more revolutions than one single revolution or less than one revolution and even then the carriage arm 10c has to make many swinging motions on the path 10a until the desired track becomes accessible. The back and forth motions-direction reversals also involve vibrations as is indicated by 10h.

With reference to figure 2, the wing shaped dual actuation arm assembly 13 and 14 are able to reach concurrently two different quadrants 20 and 21 respectively of the disk 33. The reference center line C divides the half of disk 33 area further into two equal halves to indicate the limit that one of the pair member that reaches the inner reach border of actuator 13, that is, it shows the inner limit of the distance 17a that one of the pair member of wing shaped actuation-carriage arm 13 moves within the  $\frac{1}{2}$  quarter area,  $\frac{1}{2}$  of the radius of disk 33. Similarly the inner actuator member 14 moves within limited distance 18. Wing shaped dual

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